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09/552,217	04/19/2000	Thomas Eugene Hubina	81226-249452	3364

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EXAMINER	
JERABEK, KELLY L	

ART UNIT	PAPER NUMBER
2612	3

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/552,217	HUBINA ET AL.	
	Examiner	Art Unit	
	Kelly L. Jerabek	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,14-16,18-20,22-24 and 26-38* is/are rejected.

7)☒ Claim(s) *2,13,17,21, and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page 7, line 21 "Image Processor (13)" should be "Image Processor (18). Page 13, line 22 "while" should be "white".

Appropriate correction is required.

Claim Objections

Claim 10 objected to because of the following informalities: The claim recites on page 39, line 7 "logic for selecting for each of the first pixels at least one spatially pixel responsive to photoexposure in a third spectral region". The word "spatially" does not make sense in the sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in
>
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,3,4,8,9, and 10 rejected under 35 U.S.C. 102(e) as being anticipated by Saito et al. US 6,181,374.

Re claim 1, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-34). The camera includes a CCD (fig. 5: 3) that consists of pixels responsive to photon energy.

The automatic white balance control device identifies each pixel responsive to photoexposure in a first spectral region having an intensity value between a minimum intensity value and a maximum intensity value (col. 7, lines 54-65). The white balance control device also selects one pixel associated with a second spectral region and one pixel associated with a third spectral region (col. 7, lines 15-26). The pixels corresponding to the second and third spectral regions are the red and blue pixels respectively. The intensity values of the associated second (R) and third (B) pixels are associated with the intensity value of the first pixel (G) to determine a matching set (col. 7, 46-56). The ratios IR/IG and IB/IG illustrate this association. Finally, first and second gain coefficients are determined for application to the intensity values of each of the pixels associated with the second (R) and third (B) spectral regions based on the accumulation of the intensity values associated with the selected second and third pixels respectively (col. 21, lines 14-24). The control signal Rcont is used to control

white balance of the pixels associated with the second (R) region and the control signal Bcont is used to control white balance of the pixels associated with the third (B) region.

Re claim 3, Saito discloses that the first gain coefficient (Rcont) is proportional to an average intensity value of the selected second pixels (IR) divided by an average intensity value of each of the selected first pixels (IG) (col. 21, lines 14-24). Saito also discloses that the second gain coefficient (Bcont) is proportional to an average intensity value of the selected third pixels (IB) divided by an average intensity value of each of the selected first pixels (IG) (col. 21, lines 14-24).

Re claim 4, Saito mentions that Rcont and Bcont are the white balance control signals, therefore the each of the pixels associated with the second spectral region is scaled by Rcont and each of the pixels associated with the third spectral region is scaled by Bcont (col. 21, lines 20-24).

Re claim 8, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 8, see claim 1.

Re claim 9, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD

(fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 9, see claim 1.

Re claim 10, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 10, see claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5,6, and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Lin et al. US 6,642,962.

Re claim 5, Saito discloses all of the limitations of the automatic white balance control device for a video camera according to claim 1. However, Saito does not explicitly state that the selecting step includes selecting at least one second associated pixel as having the same location as the first pixel and selecting at least one third associated pixel as having the same location as the first pixel.

Lin also discloses a camera that can perform white balancing. Lin shows that by interpolation, intensity values of the three colors R, G, and B can be determined at a single pixel location (col. 2, lines 35-50). Interpolation is advantageous because it can provide multiple color intensity values at a single pixel. For this reason, it would have been obvious to include interpolation as taught in Lin in the automatic white balance control device disclosed by Saito. Doing so would provide a means for selecting at least one second associated pixel and at least one third associated pixel as having the same location as the first pixel.

Re claim 6, Saito discloses all of the limitations of the automatic white balance control device for a video camera according to claim 1. However, Saito does not explicitly state that the selecting step includes selecting at least one second associated pixel as having a first adjacent location to the location of the first pixel and selecting at least one third associated pixel as having a second adjacent location to the location of the display.

Lin also discloses a camera that can perform white balancing. Lin discloses a Bayer pattern (fig. 2). A Bayer pattern is advantageous because there are twice as many green pixels in a Bayer pattern than there are red or blue pixels (col. 6, lines 8-13). Therefore, since the green pixels are more abundant than the red and blue pixels there will always be two red pixels and two blue pixels adjacent to any green pixel. For this reason, it would have been obvious to include a Bayer pattern as taught in Lin in the automatic white balance control device disclosed by Saito. Doing so would provide a

means for selecting at least one second associated pixel as having a first adjacent location to the location of the first pixel and selecting at least one third associated pixel as having a second adjacent location to the location of the display.

Re claim 7, Saito mentions that Rcont and Bcont are the white balance control signals, therefore the each of the pixels associated with the second spectral region is scaled by Rcont and each of the pixels associated with the third spectral region is scaled by Bcont (col. 21, lines 20-24). Based on this information and the information of claim 6 the intensity value of a pixel associated with the second spectral region at the location of the first pixel based on the first scaled intensity value can be determined. Also, the intensity value of a pixel associated with the third spectral region at the location of the first pixel based on the second scaled intensity value can be determined.

Claims 11,12,15,16,19,20,23,24,27,29,30,32,33,35,36 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Hattori US 5,398,058.

Re claim 11, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-34). The camera includes a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. The automatic white balance control device identifies white regions based upon a dispersion of intensities at a group of associated pixels in the imaging array. Each of the pixels is grouped into a distinct spectral region (col. 7, lines 54-64). Saito also discloses gain coefficients to be applied to intensities of

photoexposure in the image for pixels associated with at least one color (col. 21, lines 14-24). However, although Saito mentions the three different colors (R, G, and B), Saito does not explicitly mention color channels.

Hattori also discloses an image pick-up device that can perform white balancing. Hattori shows that color channels can be used to determine gain correction and to differentiate between different spectral regions (col. 3, lines 44-48). Hattori also mentions that the G channel is used as a reference channel. Color channels and reference channels are advantageous because they can be used to distinguish pixels of different colors or intensity values. For this reason, it would have been obvious to include color channels and reference channels as taught in Hattori in the automatic white balance control device disclosed by Saito. Doing so would provide a means for distinguishing the different pixels in the identified white regions.

Re claim 12, Saito discloses a method for determining groups of associated pixels in the image, each of the groups having three different colors (R, G, and B). (col. 8, lines 7-18). Saito also states that for each group of associated pixels, the intensity of the green pixels is compared with the intensity of the blue and red pixels (col. 8, line 8). However, although Saito mentions the three different colors (R, G, and B), Saito does not explicitly mention color channels or reference channels.

Hattori discloses an image pick-up device that can perform white balancing. Hattori shows that color channels can be used to determine gain correction and to differentiate between different spectral regions (col. 3, lines 44-48). Hattori also shows

that a reference channel can be chosen from a plurality of color channels. Color channels and reference channels are advantageous because they can be used to distinguish pixels of different colors or intensity values. For this reason, it would have been obvious to include color channels as taught in Hattori in the automatic white balance control device disclosed by Saito. Doing so would provide a means for determining groups of associated pixels in the image and comparing an intensity of the reference channel pixel with an intensity of at least one non-reference channel pixel.

Re claim 15, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 15, see claim 11.

Re claim 16, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 16, see claim 12.

Re claim 19, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in

order to operate a microcomputer. For the remaining limitations of claim 19, see claim 11.

Re claim 20, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 20, see claim 12.

Re claim 23, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 23, see claim 11.

Re claim 24, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 24, see claim 12.

Re claim 27, Saito discloses a method for determining groups of associated pixels in the image, each of the groups having three different colors (R, G, and B). (col. 8, lines 7-18). Saito also states that for each of the pixels in the associated group, a whiteness weight is determined based upon a dispersion of the intensities of the pixels of different colors (fig. 6: A1; fig. 5, 33; col. 7, lines 54-67; col. 8, lines 1-6). In addition, Saito states gain coefficients that are applied to the intensities of pixels of a particular color (col. 21, lines 14-24). However, although Saito mentions the three different colors (R, G, and B), Saito does not explicitly mention color channels or reference channels.

Hattori also discloses an image pick-up device that can perform white balancing. Hattori shows that color channels can be used to determine gain correction and to differentiate between different spectral regions (col. 3, lines 44-48). Hattori also shows that a reference channel can be chosen from a plurality of color channels. Color channels and reference channels are advantageous because they can be used to distinguish pixels of different colors or intensity values. For this reason, it would have been obvious to include color channels as taught in Hattori in the automatic white balance control device disclosed by Saito. Doing so would provide a means for determining groups of associated pixels in the image and determining gain coefficients to be applied to intensities of the pixels.

Re claim 29, see claim 27.

Re claim 30, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 30, see claim 27.

Re claim 32, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 32, see claim 27.

Re claim 33, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 33, see claim 27.

Re claim 35, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 35, see claim 27.

Re claim 36, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD

(fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 36, see claim 27.

Re claim 38, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 38, see claim 27.

Claims 14,18,22, and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Hattori and further in view of Lin.

Re claim 14, Saito in view of Hattori includes all of the limitations of claim 11. However, Saito in view of Hattori does not mention calculating intermediate gain coefficients and selecting the gain coefficients to be applied to the intensities of the pixels from a plurality of sets of gain coefficients stored in a memory.

Like Saito and Hattori, Lin also discloses an image pick-up device that can perform white balancing. Lin discusses calculating gain coefficients for three different pixel colors R, G, and B (col. 12, lines 50-67). Lin also mentions that the gain

coefficients are selected from a previous frame and further mentions that regions with averages that are far away may be discarded (col. 13, lines 10-24). Calculating and storing intermediate gain coefficients is advantageous because it allows some coefficients to be discarded if necessary. For this reason, it would have been obvious to include intermediate gain coefficients as taught in Lin in the automatic white balance control device disclosed by Saito. Doing so would provide a means for controlling which gain coefficients will be used in the white balancing process.

Re claim 18, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 18, see claim 14.

Re claim 22, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 22, see claim 14.

Re claim 26, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD

(fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 26, see claim 14.

Claims 28,31,34, and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Hattori and further in view of Spaulding et al. US 6,243,133.

Re claim 28, Saito in view of Hattori includes all of the limitations of claim 27. However, Saito in view of Hattori does not mention determining an associated whiteness weight using fuzzy logic.

Like Saito and Hattori, Spaulding also discloses an image pick-up device. Spaulding discusses it is common to use fuzzy logic as a weighting method (col. 9, lines 1-7). Using fuzzy logic as a weighting method is advantageous because it is a more sophisticated and accurate approach. For this reason, it would have been obvious to include fuzzy logic as a weighting method as taught in Spaulding in the automatic white balance control device disclosed by Saito. Doing so would provide a means for accurately and efficiently determining a whiteness weight based upon dispersion of the intensities of different pixels.

Re claim 31, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 31, see claim 28.

Re claim 34, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. For the remaining limitations of claim 34, see claim 28.

Re claim 37, Saito discloses an automatic white balance control device for a video camera (col. 1, lines 23-25). The camera includes a lens (fig. 5: 1), and a CCD (fig. 5: 3) that consists of pixels responsive to photon energy. In addition, the camera includes a microcomputer (fig. 5: 29). A computer readable medium is necessary in order to operate a microcomputer. For the remaining limitations of claim 37, see claim 28.

Allowable Subject Matter

1. Claims 2,13,17,21, and 25 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

2. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

a. "...wherein the step of associating the intensity value of the associated second pixel and the intensity value of the associated third pixel with the intensity value of the selected first pixel further includes: determining whether the intensity value of the associated second pixel is within a first range of the intensity value of the selected first pixel; and determining whether the intensity value of the associated third pixel is within a second range of the intensity value of the associated second pixel" as recited in claim 2.

b. "...wherein the step of identifying the white regions in the image further comprises: associating first and second non-reference channel pixels with each group of associated pixels; and for each group of associated pixels, determining whether an intensity of photoexposure of the first non-reference channel are within a predetermined range about the intensity of photoexposure of the reference channel pixel reference channel pixel with an intensity of

photoexposure of the at least one non-reference channel pixel; and determining whether the difference between the intensities of photoexposure of the first and second non-reference channel pixels is less than a predetermined difference" as recited in claim 13.

c. "...logic for associating first and second non-reference channel pixels with each group of associated pixels; and for each group of associated pixels, logic for determining whether an intensity of photoexposure of the first non-reference channel pixel and an intensity of photoexposure of a second non-reference channel are within a predetermined range about the intensity of photoexposure of the reference channel pixel reference channel pixel with an intensity of photoexposure of the at least one non-reference channel pixel; and logic for determining whether the difference between the intensities of photoexposure of the first and second non-reference channel pixels is less than a predetermined difference" as recited in claim 17.

d. "...associating first and second non-reference channel pixels with each group of associated pixels; and for each group of associated pixels, determining whether an intensity of photoexposure of the first non-reference channel pixel and an intensity of a second non-reference channel are within a predetermined range about the intensity of photoexposure of the reference channel pixel reference channel pixel with an intensity of photoexposure of the at least one non-reference channel pixel; and determining whether the difference between the

intensities of photoexposure of the first and second non-reference channel pixels is less than a predetermined difference" as recited in claim 21.

e. "...logic for associating first and second non-reference channel pixels with each group of associated pixels; and for each group of associated pixels, logic for determining whether an intensity of photoexposure of the first non-reference channel pixel and an intensity of photoexposure of a second non-reference channel are within a predetermined range about the intensity of photoexposure of the reference channel pixel reference channel pixel with an intensity of photoexposure of the at least one non-reference channel pixel; and logic for determining whether the difference between the intensities of photoexposure of the first and second non-reference channel pixels is less than a predetermined difference" as recited in claim 25.

In order to expedite the prosecution of this application it is recommended that the above claims be written in independent form.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ueda (US 5,485,202) discloses a white balance adjusting apparatus. The information regarding performing white balancing in specific regions of the picture is pertinent material.

Tanaka et al. (US 5,760,831) discloses an image processing apparatus with white balance control. The information regarding white balancing coefficients is pertinent material.

Hafele et al. (US 5,926,213) discloses a device for correcting the tone of color pictures recorded by a video camera. The information regarding using the color green as a reference channel is pertinent material.

Van Der Voort (US 6,249,323) discloses a method for white balance control. The information regarding white balance coefficients is pertinent material.

Katayama (US 5,917,556) discloses a method for split white balance processing of a color image. The information regarding tricolor pixels is pertinent material.

Juen (US 6,459,449) discloses a color reproduction correction device and correction method for an imaging apparatus. The information regarding difference signals and matrix coefficients is pertinent material.

Toi (US 6,630,956) discloses a device and method for processing color signals employing vector operation color space conversion means. The information regarding white balancing is pertinent material.

Taniguchi et al. (US 5,619,347) discloses an apparatus for calculating a degree of white balance adjustment for a picture. The information regarding white region judging and white balance coefficient calculation is pertinent material.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kelly Jerabek whose telephone number is (703) 305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary examiner, Vu Le can be reached at (703)-308-6613.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

The fax number for submitting all Official communications is (703) 872-9306.

The fax number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at (703) 746-3059.

KLJ

VU LE
PRIMARY EXAMINER